

the several drawings to refer to similar components. In some instances, a sublabel is associated with a reference numeral and follows a hyphen to denote one of multiple similar components. When reference is made to a reference numeral without specification to an existing sublabel, it is intended to refer to all such multiple similar components.

[0020] **FIG. 1** provides a schematic illustration of a prior-art architecture used for processing transactions;

[0021] **FIG. 2** provides an architecture used in one embodiment of the invention for processing transactions;

[0022] **FIG. 3A** provides a schematic illustration of a structure of a point-of-sale device that may be used in embodiments of the invention;

[0023] **FIG. 3B** provides a schematic illustration of a structure of a wireless device that may be used in embodiments of the invention;

[0024] **FIG. 4A** provides a flow diagram illustrating a method for initiating a wireless device to be used in processing transactions in accordance with the invention; and

[0025] **FIG. 4B** provides a flow diagram illustrating a method for processing transactions in accordance with the invention.

#### DETAILED DESCRIPTION OF THE INVENTION

[0026] Embodiments of the invention make use of wireless devices to exchange information as part of systems and methods for processing transactions. As used herein, references to “wireless” exchanges of data are intended to refer to data exchanges made through the transmission of electromagnetic signals and are distinct from data exchanges that use physical connections such as copper wiring or optical fibers. A “wireless device” is a device that receives and transmits data wirelessly. In some instances, a wireless device may comprise a cellular device such as a cellular telephone or a handheld cellular email device. One example of a wireless protocol that may be used for implementing wireless transmissions is the IEEE 802.11b protocol, which is sometimes referred to in the art as implementing “Wi-Fi” transmissions.

[0027] Storage capacity on such wireless devices is used to record information regarding a number of account transaction mechanisms, each of which may have a counterpart in a traditional arrangement of transaction mechanisms embodied on individual cards. That is, one transaction mechanism may be a credit transaction mechanism in which a customer charges funds against a defined line of credit. Another transaction mechanism may be a debit transaction mechanism in which a customer decrements value in a defined account in substantially real time to support a transaction. A further transaction mechanism may be a stored-value transaction mechanism, which is similar in some respects to the debit transaction mechanism. While the account decremented as part of a debit transaction mechanism may be debited in multiple ways—such as by writing a check, by making a cash withdrawal, etc.—the account decremented as part of a stored-value transaction mechanism generally provides fewer options. In some cases, the only way to decrement such a stored-value account is with the stored-value transaction mechanism. The various trans-

action mechanisms may be augmented as described below to provide for loyalty programs, in which customers may accumulate points or currency that may be exchanged for bonus goods and/services in exchange for use of the transaction mechanisms.

[0028] With information regarding the account transaction mechanisms stored on the wireless device, the wireless device may be used as a surrogate for any of the cards that were previously used in executing transactions. A general overview of an architecture that may be used is provided in **FIG. 2**, with the wireless device **224** shown for exemplary purposes in the form of a cellular telephone. The wireless device **224** may communicate according to its normal wireless protocols with an existing network of relay stations **220**. In addition, the wireless device **224** may communicate wirelessly with point-of-sale devices **204** that have been equipped for wireless communications, such as through a secure Wi-Fi connection. Communications with the financial institutions **216** that manage the accounts identified for the account transaction mechanisms may be made in a number of different ways. For example, an Internet **208** facility may be used to provide communications between the point-of-sale devices **204** and host systems **218** of the financial institutions **216** that perform the actual processing functions. Alternatively, a wireless communications system **220** may be used, permitting communications with the financial institutions to be made either from the point-of-sale devices **204** or from the wireless device **224** itself. Each host system **218** generally includes a processor, a memory device, and communications interfaces to enable the described functionality. Communications among the host systems **218** of the financial institutions **216** as may be used in effecting transfers of funds to settle transactions may be made with a separate financial network **212**. Usually the financial network **212** has enhanced security and cryptographic protocols to prevent unauthorized access to the sensitive financial communications that it routes.

[0029] The information regarding the account transaction mechanisms generally identifies the account to be used in supporting transactions, including an indication of the financial institution **216** where that account is maintained. Such identifications may conveniently be made with numerical strings similar to card numbers that have portions that identify a financial institution and portions that identify specific accounts. Additional information may include ownership details of the account, current balance levels for the account, and the like. In addition, the information regarding the account may include graphical information to display a logo for the account, which may be displayed whenever information related to the account is accessed by the customer.

[0030] The wireless device may conveniently include software that allows a customer to review accounts that are identified for the account transaction mechanisms, such as in the form of an additional menu added to existing menu functionality of the wireless device **224**. In some embodiments, each of the account transaction mechanisms follows a standardized format, permitting customized financial and nonfinancial applications to be provided through exchange of information between the account transaction mechanisms.

[0031] Exemplary structures for both the point-of-sale device **204** and for the wireless device **224** are illustrated